

## In the United States Patent Office

In re Application:

Serial No: 09/676,453  
Filed: 10/02/2000  
Inventor: Bassi et al.  
Examiner: CINTINS, IVARS C  
Art Unit: 1724  
Docket no. UWO3US

The Commissioner of Patents and Trademarks,  
Washington, D.C. U.S.A. 20231.

Dear Sir:

## AMENDMENT

In response to the Final Action of January 29, 2003 and the Advisory action of April 8, 2003 please amend this application as follows

## In the claims

Sub. 22  
251

1. (Currently Amended) A liquid-solid circulating fluidized bed system comprising a first liquid fluidized bed, means to feed solids into said first fluidized bed adjacent to a first end of said first fluidized bed and means to feed a first fluid into said first fluidized bed adjacent to a second end of said first fluidized bed, said second end being remote from said first end so that said solids and said first fluid flow in counter current, a second liquid fluidized bed, said second liquid fluidized bed being an entraining liquid fluidized bed wherein a means for introducing solids and a means for introducing a second fluid into said second bed are both adjacent to one end of said second fluidized bed so that said solids and said second fluid introduced into said second bed flow concurrently through said second bed from said one end toward another end of said second fluidized bed remote from said one end, first means connecting said first fluidized bed to said second fluidized bed adjacent to said second end of said first fluidized bed and said one end of said second fluidized bed, said first connecting means includes means to feed said solids into said second fluidized bed, second means connecting said first and said second fluidized beds adjacent said first end of said first bed and said other end of said second fluidized bed, said first means connecting includes means forming a packed moving bed dynamic seal

*Sub-12*

between said first and second fluidized beds and said second means connecting includes said means to feed solids into said first fluidized bed.

Claims 2 to 20 inclusive have been deleted.

21 (Previously added) A liquid-solid circulating fluidized bed system as defined in claim 1 wherein said first and second liquid fluidized beds are substantially vertical columns.

22. (Previously Amended) A liquid-solid circulating fluidized bed system as defined in claim 21 wherein said first end of said first fluidized bed is the top end, said second end of said first fluidized bed is the bottom end, said one end of the second fluidized bed is the bottom end and said other end of said second fluidized bed is the top end.

*D1*  
*cont*

23 (Previously Amended) A liquid-solid circulating fluidized bed system as defined in claim 22 wherein said first fluid essentially flows upwards and said solids essentially flow downwards to form a counter current flow in said first fluidized bed, and wherein said second fluid and solids both essentially flow upwards concurrently in the second fluidized bed.

24 (Previously added) A liquid-solid circulating fluidized bed system as defined in claim 23 wherein second means connecting said first and said second liquid fluidized beds includes a washer for washing said solids before they are fed into said first end of said first fluidized bed.

25 (Previously added) A liquid-solid circulating fluidized bed system as defined in claim 24 wherein said second means connecting said first and said second liquid fluidized beds further includes a separator means for separating solids from fluid and exhausting such separated fluid to provide separated solids.

26 (Previously added) A liquid-solid circulating fluidized bed system as defined in claim 24 wherein said second means connecting said first and said second liquid fluidized beds further includes a hydraulic seal between said first and second fluidized beds.

27 (Previously added) A liquid-solid circulating fluidized bed system as defined in claim 23 wherein said first means connecting said first and said second liquid fluidized beds includes a second washer for washing solids adjacent to said second end of said first fluidized before they are introduced into said second fluidized bed.

28. (Previously Amended) A liquid-solid circulating fluidized bed system as defined in claim 27 wherein said first means connecting said first and said second liquid fluidized beds further includes a separator means for separating solids from fluid and exhausting such separated fluid to provide separated solids.

Please cancel claim 29.

Sub. 12  
D1  
cont.

Claims 30 to 33 inclusive have been deleted.

34. (Previously Amended) A liquid-solid circulating fluidized bed system as defined in claim 1 wherein second means connecting said first and said second liquid fluidized beds includes a washer for washing said solids before they are fed into said first end of said first fluidized bed, a separator means for separating solids from fluid and exhausting such separated fluid to provide separated solids, and a hydraulic seal between said first and second fluidized beds.

35. (Previously Amended) A liquid-solid circulating fluidized bed system as defined in claim 23 wherein second means connecting said first and said second liquid fluidized beds includes a washer for washing said solids before they are fed into said first end of said first fluidized bed, a separator means for separating solids from fluid and exhausting such separated fluid to provide separated solids, and a hydraulic seal between said first and second fluidized beds.

36 (Previously Amended) A liquid-solid circulating fluidized bed system as defined in claim 34 wherein said first means connecting said first and said liquid second fluidized beds includes a second washer for washing solids adjacent to said second end of said first fluidized before they are introduced into said second fluidized bed, a separator means for separating solids from fluid and exhausting such separated fluid to provide separated solids.

37. (Previously Amended) A liquid-solid circulating fluidized bed system as defined in claim 35 wherein said first means connecting said first and said second liquid fluidized beds includes a second washer for washing solids adjacent to said second end of said first fluidized before they are introduced into said second fluidized bed, a separator means for separating solids from fluid and exhausting such separated fluid to provide separated solids.

Claims 38 to 45 inclusive have been deleted.

OFFICIAL

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April 28, 2003.

To: Ivars C, Cintins

Group 1724 US Patent Office

After Final Response

Pages to Follow: 4

RE: Application no 09/676,453 filed 10/02/2000

Attached is the response to the Final Action of January 29 2002 and the Advisory Action of April 8, 2003.

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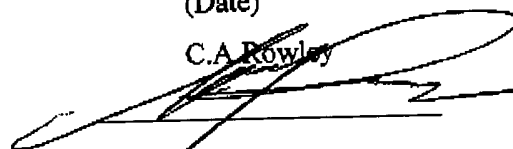
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